

State Defendants' Hearing Exhibit 5

Curling v. Raffensperger,
Dkt. No. 1:17-CV-2989-AT



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Meet This Year's WIRED25: People Who Are Making Things Better

The scientists, technologists, artists, and chefs who are standing between us and species collapse.

WHEN SARTRE SAID hell is other people, he wasn't living through 2020. Right now, other people are the only thing between us and species collapse. Not just the people we occasionally encounter behind fugly masks—but the experts and innovators out in the world,

leading the way. The 17-year-old hacker building his own coronavirus tracker. The Google AI wonk un-coding machine bias. A former IT guy helping his community thwart surveillance. There are people everywhere, in and out of the spotlight—in tech, science, food, culture, politics—who aren't deterred by disaster. Their wish: to make things better for all of us. Sounds like heaven. —*The Editors*

This feature appears in the October 2020 issue. [Subscribe to WIRED.](#)

Lisa Piccirillo

Assistant professor, MIT; solver of the Conway Knot

Piccirillo untangled the 50-year-old Conway knot in a single week, working on the mathematical challenge in the evening as self-assigned homework. She's now been published in the prestigious *Annals of Mathematics* and has landed a tenure-track position at MIT.

Her hobbies:

- Woodworking
- '70s-era Japanese motorcycles

Her favorite podcast: 99% Invisible

“There’s this idea that you have to be super-duper, magically smart to be a mathematician. That’s a load of gibberish. Anybody who loves math can be a mathematician. You don’t have to be a genius. You don’t have to be nerdy.”

- LISA PICCIRILLO

Tsai Ing-Wen, Chen Chien-Jen, and Audrey Tang

President, Taiwan; VP (until May 2020), epidemiologist; digital minister

A country’s first female president, an epidemiologist as her veep, and a transgender digital minister with anarchist beliefs—together, this Taiwanese trio all but eradicated the coronavirus from their homeland. They did so through decisive actions, like early travel bans, strict social distancing measures, and real-time mask-availability apps. The country’s true key to success, though, may be the hard lessons learned from the 2003 SARS outbreak (and the ensuing trust their people now have in their country’s institutions).

Their fellow Covid conquerors:

- **Anne Hidalgo**, mayor, Paris
- **Kathy Lofy**, state health officer, Washington
- **Jacinda Ardern**, prime minister, New Zealand
- **Sara Cody**, public health director, Santa Clara County, California
- **London Breed**, mayor, San Francisco

Anthony Fauci

Director, National Institute of Allergy and Infectious Diseases

Fauci fell for public service through the work of his father, a neighborhood pharmacist who often doubled as doctor for low-income residents. As director of NIAID since 1984, he's advised six presidents on HIV, Ebola, Zika, and more. His integrity in the face of Covid-19 has made him an icon. In a divided nation, he's also a lightning rod.

"A lot of people think public health is the obstacle. That's incorrect. Public health measures should be a gateway to opening the country safely. The best way to do that is to get control of the outbreak, and the best way to get control of the outbreak is to abide by the guidelines. If everybody took that seriously, we could turn this around."

— ANTHONY FAUCI

No breaks: Fauci has been working 18 hours a day, seven days a week, since the beginning of February.

Public health's next generation: Kizzmekia Corbett, viral immunologist, NIAID Vaccine Research Center. "Corbett represents what's really good about America, in the sense that we have Black young people, who are in the very early stages of their career, who have been able to team up with experienced investigators and have made major contributions. She's going to be a real role model, as both a woman and as an African American." —Anthony Fauci

Al Gore

Founder and chair, the Climate Reality Project

The truth is increasingly inconvenient: The globe is getting hotter, and we're to blame. In 2020, though, Gore is still working to fix it, by funding sustainable companies through the equity firm Generation Investment Management and educating the masses through his nonprofit Climate Reality Project. Among its campaigns: boosting voter registration to elect eco-friendly politicians.

“We are at a political tipping point, thanks in large part to Greta Thunberg and millions of other young people speaking truth to power. They bring courage and moral clarity to the climate movement.”

— GORE, FROM AN INTERVIEW WITH *HOUSTON FORWARD TIMES*

Patrice Peck

Creator, Coronavirus News for Black Folks

In April, Peck launched a weekly newsletter to give the Black community the coronavirus coverage white journalists weren't delivering—quickly accruing nearly 1,000 subscribers in the first month.

Her recommended TV shows:

- *I May Destroy You*
- *Little America*
- *Ramy*

Instagram follows:

- **Zeba Blay** (@zebablay), senior culture writer, Huffington Post
- **Kimberly Drew** (@museummammy), art curator and writer

More fabulous corona-communicators:

- **Shardé Davis and Joy Melody Woods**, #BlackintheIvory
 - **Corey Hardin**, lead doctor, Mass General FLARE newsletter
 - **Bob Wachter**, chair, UCSF Department of Medicine and San Francisco's unofficial Twitter town crier
-

Ava DuVernay

Filmmaker

DuVernay may be the most relevant director of 2020. Her body of work includes *Selma*, *When They See Us*—about the Central Park Five—and *13th*, her 2016 documentary about mass incarceration. (Viewership of the Netflix doc skyrocketed in the three weeks following George Floyd's murder.) This year she launched the online social justice course Array 101, as well as LEAP, a fund for artists whose work explores police violence.

More cultural masterminds: Misha Green, Janet Mock, Michaela Coel, Nia DaCosta, Lena Waithe, Issa Rae, Beyoncé

Timnit Gebru

Technical co-lead, Google's Ethical Artificial Intelligence Team; cofounder, Black in AI

In 2016, Gebru was shocked to count only “about five Black people” out of an estimated 5,500 attendees at an AI conference. The following year, she helped organize Black in AI’s first annual workshop to bring more diversity to the field. Her research has spotlighted racist algorithms and the ethical quandaries of data-mining projects and AI, arguing in a January 2020 paper that current methods of data collection and annotation for machine learning are rife with biases capable of causing real-world harm.

“There’s a lot of gatekeeping in the tech industry, but the industry needs people from all backgrounds. So don’t let that gatekeeping make you feel like this is a thing you cannot do. It’s important to find your support systems, find your advocates.”

— TIMNIT GEBRU

Gebru's Hobbies:

- Piano
- Staring into space at cafés

Recommended TV shows:

- *Queen Sono*
 - *Ramy*
 - *The Wire*
-

Avi Schiffmann

Founder, [nCoV2019.live](#)

Just 17 years old, Schiffmann thought the government’s coronavirus tracking sites “sucked.” So he made his own. He has now attracted some 1.7 billion unique visitors and rejected millions of dollars in ads to keep his site bias- and distraction-free.

“A lot of people say, ‘You’re going to be the next Mark Zuckerberg,’ but I think that’s kind of silly. The next Mark Zuckerberg is not going to make a social network. The next Larry Page is not going to make a search engine. I’m going to make my own unique, really big thing.”

– AVI SCHIFFMANN

He’d like to meet: Bill Gates, Tim Berners-Lee

His other project: 2020protests, a tracking site for BLM protests

Recommended book: Factfulness: Ten Reasons We’re Wrong About the World—and Why Things Are Better Than You Think, Hans Rosling, Anna Rosling Rönnlund, and Ola Rosling

Eric Yuan and Sarah Friar

CEO, Zoom; CEO, Nextdoor

By last April, well into the pandemic, Zoom’s user base had climbed to more than 300 million daily users, and Yuan shifted his platform from servicing boardroom meetings to hosting quarantined book clubs, birthday parties, happy hours, weddings, graduations, and more. Then the “Zoombombing” began, pushing Yuan to mandate meeting passcodes and offer free end-to-end encryption for all users.

Internet explorer: Yuan was inspired to pursue a career in tech after seeing Bill Gates give a speech in Japan in 1995.

“In the future, I think Zoom meetings will become even more immersive. I can imagine being in a Zoom where I can shake your hand, and you can feel it, or I can have a cup of coffee and you can smell it.”

– ERIC YUAN

Friar, meanwhile, saw Nextdoor’s daily users soar 80 percent from February to March, as the pandemic shrank people’s daily lives to a few neighborhood blocks. She has now fine-tuned the site to combat misinformation, amplify local Samaritans, and promote small businesses and nonprofits.

“The good news is even while people’s faith in big institutions has fallen away, almost 50 percent of people think that their relationship with their neighbors will be stronger after this crisis.”

– SARAH FRIAR

Friar’s recommended books:

- *Together*, Vivek H. Murthy
- *Biased*, Jennifer L. Eberhardt

Vijaya Gadde

Legal, policy, and trust and safety lead, Twitter

Joining [Twitter](#) in 2011, Gadde quickly ascended to the top lawyer spot, where she now overlooks the site's 280-character id. Her latest challenge: counseling the Twitterverse through one of the most boundary-pushing presidential races in US history. This year, the platform started placing misinformation labels on high-profile tweets that it deemed capable of jeopardizing public safety or capsizing the democratic process. One such label was slapped onto President Trump's [May 26 post](#) that claimed mail-in voting would lead to widespread fraud.

“Our rules can never be stagnant. They have always had to evolve to new behaviors, new forms of online speech, and the changing world offline. In many ways, what we see on Twitter is a reflection of the challenges within society.”

— VIJAYA GADDE

Influencers: Gadde toyed with the idea of studying archaeology and anthropology in college, until her parents talked her out of it.

Recommended book: [*A Gentleman in Moscow*](#), Amor Towles

Her fellow guardian: [Del Harvey](#), vice president of trust and safety, Twitter

Ben Adida

Executive director, VotingWorks

Adida started the nonpartisan, nonprofit VotingWorks in 2018 to ensure that US elections are trustworthy and accessible. It has done so by offering affordable paper-ballot-fed voting machines with voter-verifiable tracking codes and conducting risk-limiting audits. VotingWorks is developing print-at-home mail-in ballots. Plus, all of its software is written with open source code, making it more reliable and secure.

“We all have to believe our elections are working correctly. We all have to believe our judicial system is working correctly. We all have to believe the rules are being followed, and the moment we stop believing in that is the moment we lose democracy.”

– BEN ADIDA

His hobbies:

- Baking
- Basketball
- Listening to Taylor Swift with his kids

Adida’s election tech comrade: Josh Benaloh, senior cryptographer, Microsoft Research

Sarah Cooper

Comedian

Without penning a single joke, Cooper has lit up TikTok and Twitter with her lip-sync parodies of President Trump. She has won bigly, with a guest-host spot on *Jimmy Kimmel Live* and an upcoming Netflix special called *Everything's Fine*.

James Murdoch

Founder, Lupa Systems; ex-CEO, 21st Century Fox

On July 31, Murdoch resigned from the board of News Corp “due to disagreements over certain editorial content” and “other strategic decisions,” severing his last tie to his family’s media empire. Long considered the black sheep, he previously used part of his \$2 billion stake in the majority sale of Fox to Disney to launch his investment firm, Lupa Systems. Among its goals: finance a more balanced media landscape, purge the internet of disinformation, and support eco-conscious businesses.

“Sowing doubt, or outright falsehood, has been a key strategy for the opponents of climate action for decades. The co-opting of new digital platforms, as well as old analog ones, for the spread of disinformation—on a very wide variety of topics—is only accelerating. Calling out the problem is step one; finding a tool kit to deal with it is an essential task for our democracy.”

– JAMES MURDOCH

His hobby: Studying the history of Central Asia, “particularly the parts where great empires enter long periods of terminal decline.”

Arlan Hamilton and Katie Rae

Founder, Backstage Capital; CEO, The Engine

Hamilton started the venture firm Backstage Capital while homeless, intent on investing in female, POC, and LGBTQ company founders long ignored by the Silicon Valley boys' club. Read about it in her new book, released in May, *It's About Damn Time*.

“There’s been so many times when I’ve walked into a room, and someone handed me their coat or keys and just assumed I was the help. The next time that happens, I’m taking the car.”

– ARLAN HAMILTON

In 2016, MIT approached veteran venture capitalist Katie Rae after faculty bemoaned a paucity of funds for startups tackling hard problems that require years of research and development. She has now helped VC firm the Engine raise a \$205 million fund for people who are focused on long-term challenges like climate change and world hunger.

Rae's hobby: Paddleboarding with her dog, Lulu

Hamilton's guilty quarantine pleasure: *The Titan Games* with Dwayne "the Rock" Johnson

Showrunner: Hamilton was a tour manager for the likes of Toni Braxton, CeeLo Green, and Amanda Palmer before switching to VC.

More VCs on a mission:

- **Carmichael Roberts**, cofounder, Material Impact
 - **Swati Mylavarapu**, cofounder, Incite
-

Gwynne Shotwell

COO, SpaceX

Shotwell joined SpaceX as its seventh employee in 2002. Today she oversees the 8,000-person aerospace company, which this year scheduled 38 launches, including the Crew Dragon on May 30 with two NASA astronauts on board heading for the ISS. That liftoff marked the first time a commercially built spacecraft carried humans into orbit, turning Elon Musk's starry-eyed dreams into headlines. Up next: the moon and Mars.

Isla Myers-Smith

Founder, Team Shrub

Over the past dozen years, Team Shrub has used satellites, drones, and boots on the ground to study the Arctic ice retreat—and flora advance—in the carbon-rich tundra. The group recently started putting AI to work, analyzing the terabytes of data they collected and giving us a glimpse into our precarious future.

“These arctic ecosystems trap a lot of soil carbon, so they’re basically like a giant freezer for the planet. And there are projections that, with warming, atmospheric CO₂ could double just from permafrost thaw.”

— ISLA MYERS-SMITH

Tech support: Myers-Smith cofounded Coding Club to teach coding to ecology students.

Her hobby: Playing folk music in the pubs of Edinburgh, Scotland.

Her recommended books:

- The Curve of Time, M. Blanchet
- A Woman in the Polar Night, Christiane Ritter
- The Invention of Nature, Andrea Wulf

Deonie and Steve Allen

Microplastic researchers, University of Strathclyde, Glasgow

The two discovered microplastic in ocean breezes and over the French Pyrenees—in other words, it's everywhere. The Allens' 2020 mission is to pinpoint the sources and try to halt the spread.

“We were expecting to find 1 to 10 particles of plastic per square meter of air, not the 300 and something we found.”

— DEONIE ALLEN, ON MICROPLASTICS IN THE PYRENEES

Adventure time: The Allens both paraglide and have lived on a boat for the past two decades, traveling halfway around the world.

Their recommended TV show: *BrainDead*

Maddie Stone

Security researcher, Google Project Zero

After considering careers in interior design and with the FBI as a teenager, Stone was coaxed into pursuing a degree in engineering by her father. Now, as part of Project Zero, she's been hunting the bugs hiding in Silicon Valley's code. In the wild, these pests are known as zero-day vulnerabilities, and they can wreak havoc when exploited by hackers.

"My hope is that we make exploiting people with zero days such a bad return on investment for attackers that they no longer try—so that they no longer have a job."

— MADDIE STONE

High achiever: Stone climbed Mount Kilimanjaro and has read over 80 books this year.

Matt Mitchell

Founder, CryptoHarlem

Mitchell gained firsthand knowledge of surveillance after being lured into two consecutive employee-monitoring jobs. He's now using his skills to stymie the digital panopticon, throwing (currently virtual) parties to educate and organize the Black community, whose overpoliced neighborhoods are under 24/7 surveillance.

An early inspiration: Seeing the Black hacker John Threat on the cover of WIRED in 1994. “Once you see it, you can be it. So that was a big, big deal. A lot of Black hackers, they still have that magazine in their house somewhere.”

Recommended book: *Dark Matters*, Simone Browne

“If you live in Harlem, there are so many pieces of technology that are designed to surveil you all day. A lot of it I don’t see when I’m going to work or in other neighborhoods, but I definitely see it here. So I spend a lot of time talking about the technology around folks, the history of it and also how to circumvent it, how to break free from it.”

— MATT MITCHELL

Ohad Zaidenberg, Nate Warfield, and Marc Rogers

Cofounders, CTI League

In March, CTI formed a now 1,500-deep “Justice League” of volunteer hackers to defend the health care sector, and hospitals in particular, from cybercriminals exploiting the Covid crisis.

“We’re saving people who are saving lives. Not just making someone’s bottom line bigger but actually protecting someone’s grandmother or their brother or their sister or their mom. That’s a really good feeling.”

– NATE WARFIELD

Warfield’s Recommended books:

- *Sandworm*, Andy Greenberg (WIRED senior writer)
- *Countdown to Zero Day*, Kim Zetter (former WIRED reporter)
- *Snow Crash*, Neal Stephenson

Count Hackula: Zaidenberg often works from 10 am to 3 am and is referred to as the “CTI League vampire.”

Ryan and Brandon Tseng

Cofounders, Shield AI

After serving seven years as a Navy SEAL, Brandon Tseng approached his entrepreneurial brother Ryan about creating a company that would use AI to save the lives of service

members and civilians. Their fully autonomous quadcopter drones are now scouting combat zones overseas—even inside buildings and tunnels—to identify threats for soldiers.

“I think there should be a company the size of Microsoft or Google committed to the mission of protecting service members and civilians.”

— RYAN TSENG

Flashback: Brandon considered becoming a director when he was young; Ryan often starred in his short films.

Quarantine pleasures:

- Ryan: Growing tomatoes with his wife
 - Brandon: pickleball and Starcraft
-

Swizz Beatz and Timbaland

Co-creators, Verzuz

On March 24, megaproducers Timbaland and Swizz Beatz got a concert-starved nation on its feet when they livestreamed Verzuz’s inaugural hip hop and R&B battle to 20,000-plus fans on [Instagram](#). They’ve now migrated their free face-offs to Apple TV and staged flowdowns like DMX vs. Snoop Dogg, Rick Ross vs. 2 Chainz, and Erykah Badu vs. Jill Scott. But it’s about

more than just lyrical sparring and beat-backed pugilism—the pair see the series as a sort of museum for Black musicians everywhere.

Arca

Artist and producer

Arca's new avant-pop album *KiCk i* (released in June) intercuts bubblegum beats with machine-gun clatter, cyberpunk reggaeton, and Björk crooning Spanish poetry in a bilingual duet. The kinetic stream of sonic shape-shifting mirrors the transgender Venezuelan artist's outspoken reinvention of the 21st-century diva. Or, as she raps on "Nonbinary," "What a treat / It is to be / Nonbinary / Ma chérie / Tee-hee-hee / Bitch."

"Each KiCk showcases different sides of my musical expression, each with its distinct sensibilities, degrees of introversion and extroversion. There's mischief, play, kink, BDSM, curiosity, animality, spirituality, tenderness, solemnity, joy, defiance, reverie, and above all: a mutant faith."

— ARCA

Recommended video game: *Sky: Children of the Light*

Recommended musician: Simón Díaz

Jon Gray, Lester Walker, and Pierre Serrao

Cofounders, Ghetto Gastro

In the midst of a pandemic and BLM protests, this Bronx-based collective partnered with La Morada, a local Oaxacan restaurant, and Rethink, a nonprofit that redirects excess food to NYC families. Together, they've served 1,000 meals a day to those in need. Their goal is to keep growing the program, to feed, they say, millions.

"We use food as a weapon to sharpen up our thinking patterns and create a better atmosphere for ourselves and our children and our grandchildren."

— LESTER WALKER

Body movin': Serrao originally considered becoming a pro soccer player or a Chippendales dancer.

Walker's recommended books:

- Prince of Darkness, Shane White
- Guns, Germs, and Steel, Jared Diamond
- Assata: An Autobiography, Assata Shakur

Gray's recommended TV shows:

- *The Chi*
- *I May Destroy You*

- *Sherlock*

Walker's hobby: "Being fly. The drip should be effortless, it shouldn't look like it's difficult to do. That's my hobby—doing shit effortlessly."

Other prophets of food:

- **Gabriela Cámara**, Cala restaurant, San Francisco: "We're always struggling as an industry. The margins have been getting smaller and smaller. The only way to get larger margins is to cut costs, and the way society has been cutting costs is by industrializing food, and we know that has greater costs in the long run."
 - **Ron Finley** ("The Gangsta Gardener"), Los Angeles
 - **Massimo Bottura**, Food for Soul, #kitchenquarantine on Instagram: "Food enables human connections. It's a powerful vehicle to inspire a change of mindset."
-

Sundar Pichai and Tim Cook

CEO, Google; CEO, Apple

In the wake of the most cataclysmic viral outbreak in over 100 years, tech titans Sundar Pichai and Tim Cook overlooked their rivalry to unite the powers of Google and Apple for the greater good. Their Covid-19 contact tracing API has since been integrated into health care sector apps around the world. The next step: persuade 3 billion smartphone users to opt into

the program and share anonymized Bluetooth pings with nearby Androids and iPhones. (Rest easy. Those encrypted pings will self-destruct in 14 days.)

How Pichai achieves calm:

- Reading
- Walking his dog, Jeffree
- Learning new skills through YouTube videos, like making Indian dishes and pizza from scratch
- Watching old football and cricket highlights

“When the pandemic started, we asked the question: How could we best use our technology strengths to be most helpful to those on the front lines of fighting the virus—health authorities and governments in particular? As we were working on the exposure notification project, we became aware of Apple’s concurrent effort in this area. It quickly became clear that we could have an even greater impact by working together.”

— SUNDAR PICHAI

Illustrations by Jay Ruben Dayrit

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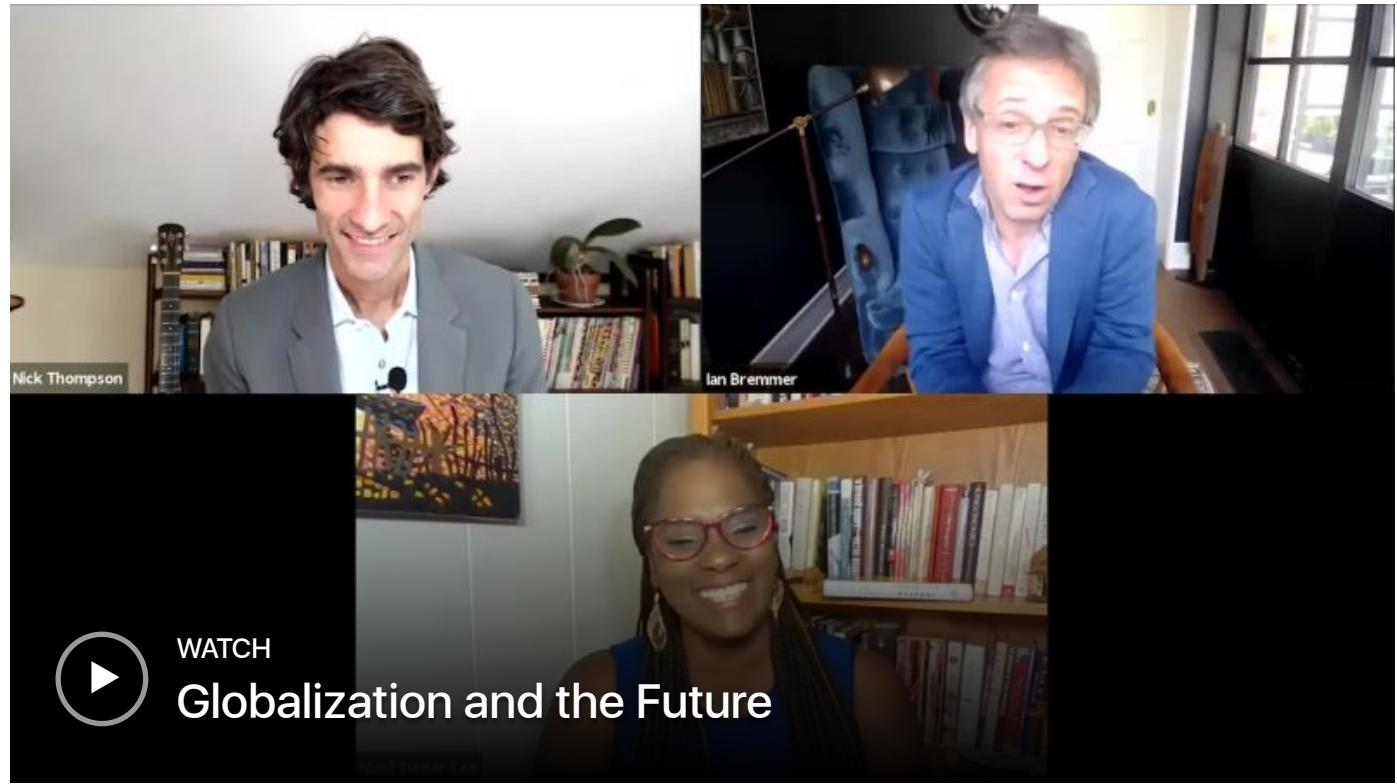
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